



Media release

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20-year research project reveals devastating loss of British & Irish flora

The new Plant Atlas is the most powerful statement ever produced on the state of our wild and naturalised plants

Thousands of botanists from the Botanical Society of Britain and Ireland (BSBI)¹ have spent the last twenty years collecting data on changes in the British and Irish flora. The results have now been published in *Plant Atlas 2020* and four main trends have emerged since the 1950s:

- 53% of our native plants² such as Harebell and Mountain Everlasting have declined in Britain due to human impacts such as agricultural intensification and climate change
- non-native plant species now outnumber native plant species in the wild – this startling discovery has huge implications for the insects and other species that depend on our native plants
- many non-native species are benign but some such as New Zealand Pigmyweed and Sitka Spruce have become invasive in semi-natural habitats where they can have negative impacts on native wildlife
- some montane plants have declined due to climate change whereas southern species such as Bee Orchid have benefited and spread northwards into Scotland.

Plant Atlas 2020 is the most in-depth survey of the British and Irish flora ever undertaken. It builds on two previous Atlas surveys³ undertaken by the BSBI in the twentieth century.

Julia Hanmer, BSBI Chief Executive, says: "*Plant Atlas 2020* presents a powerful and concerning insight into the changing distributions of our wild plants. More than three million plant records of 2,555 species, collected by hundreds of botanists across Scotland, fed into the Atlas project. The dedication and expertise of our recorders, combined with the in-depth knowledge of scientists at BSBI and UKCEH⁴, provides a unique contribution to the evidence base needed to underpin nature recovery and highlights the urgent need for action to ensure that going forwards our wild plants thrive and are valued."

Many of the habitats our wild plants depend on have been impacted by changes in agriculture since the 1950s. Matt Harding, BSBI Scotland Officer, says: "Nitrogen enrichment, habitat degradation and changes in grazing pressure have led to the decline of

many species in Scotland. Damp meadows have been drained, leading to long-term declines in plants such as Globeflower and Grass-of-Parnassus, and traditional grasslands have been reseeded or over-fertilised, resulting in declines for species such as Moonwort and Sheep's Sorrel. The decline of our ancient arable wildflowers is particularly concerning, with 66% of these species such as Corn Marigold decreasing in range in Scotland over the last 70 years. This is primarily due to arable intensification, but also to the abandonment of small-scale cropping around crofts in northern and western Scotland."

Climate change is likely to be the primary cause of decline of some Scottish mountain plants, such as Alpine Lady-fern and Alpine Speedwell. Matt says: "These species depend on areas where the snow lies late in the spring and summer, and reducing snow cover linked to climate change is impacting them. For example, nearly the entire British population of Snow Pearlwort occurs on Ben Lawers in Perthshire, where half of all known colonies have disappeared over the last 40 years, mainly due to competition from warmth-loving species." Scotland's peat bogs and moorlands will be essential as we strive to combat climate change, but these habitats are being impacted by species such as Sitka Spruce, the most frequently planted non-native commercial forestry species in Britain. Matt says: "Sitka Spruce had the greatest increase in range of any species covered by *Plant Atlas 2020*. Its ability to regenerate successfully on peaty soils that are vital for native biodiversity and carbon sequestration means that future planting will need to be carefully managed to ensure that these important peatland habitats are protected."

Dr Kevin Walker, BSBI Head of Science and *Plant Atlas 2020* co-author, says: "There's lots we can do to reverse these declines, but the most important are to increase the protection plants receive, extend the habitat available to them, and to place their needs at the very heart of nature conservation. We also need to ensure that our land, water and soil are managed more sustainably so that plants, and the species which rely upon them for food and shelter, can thrive. *Plant Atlas 2020* provides the evidence we need to do this important work, but we'll need even more research and monitoring⁵ to help better conserve our wild plants and their vitally important habitats in the decades to come".

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Editors' notes

1. The Botanical Society of Britain and Ireland (BSBI) is the leading charitable organisation promoting the enjoyment, study and conservation of wild plants in Britain and Ireland. We aim to build a diverse community of skilled and enthused botanists; provide data and science to help address biodiversity loss and climate change; and disseminate information to drive a passion for plants. We provide opportunities for involvement through a range of participation projects, surveys, events, training opportunities and the production of books and other resources. Our Distribution Database holds over 50 million plant records, making it one of the world's largest biological recording databases. www.bsbi.org
2. Of the 3,445 different plant species recorded during *Plant Atlas 2020* fieldwork, 1,692 are native to Britain and, notably, 1,753 non-natives were found that have been deliberately or accidentally introduced into the wild by humans. This startling finding means that there are now more introduced plants growing in the wild in Britain than natives, with many originating from gardens and then spreading to establish self-sustaining populations.
3. BSBI published two previous plant distribution atlases, the first in 1962, based on data collected from 1950 to 1960, and the second in 2002, based on data collected from 1987 to 1999. www.bsbi.org/atlas-2020
4. The *Plant Atlas 2020* project comprises an online Atlas, a summary document and a 2-volume book; the [online Atlas](#), which goes live at 3pm on 8th March, was created and is

hosted by the Biological Records Centre at the UK Centre for Ecology & Hydrology, and features interactive distribution maps, text and graphics displaying the phenology, altitudinal range, and time-series trends. To access the test version of the online Atlas, please visit <https://plantatlas2020.org/user/login> and use username bsbiibsb and password bsbiibsb to log in.

5. The BSBI is a partner in the National Plant Monitoring Scheme, for which volunteers survey plant species in a range of habitats across the UK. www.npms.org.uk
6. *Plant Atlas 2020: Mapping Changes in the Distribution of the British and Irish Flora*, is published on 21st March by the BSBI in partnership with Princeton University Press and The Wildlife Trusts: www.press.princeton.edu/books/hardcover/9780691247595/plant-atlas-2020. The authors are: **P. A. Stroh**, scientific officer at the Botanical Society of Britain and Ireland; **K. J. Walker**, head of science at the Botanical Society; **T. A. Humphrey**, database officer at the Botanical Society; **O. L. Pescott**, plant ecologist and data analyst at the UK Centre for Ecology & Hydrology; and **R. J. Burkmar**, web developer at the UK Centre for Ecology & Hydrology.
7. The Wildlife Trusts are making the world wilder and helping to ensure that nature is part of everyone's lives. We are a grassroots movement of 46 charities with more than 900,000 members and 38,000 volunteers. No matter where you are in Britain, there is a Wildlife Trust inspiring people and saving, protecting and standing up for the natural world. With the support of our members, we care for and restore special places for nature on land and run marine conservation projects and collect vital data on the state of our seas. Every Wildlife Trust works within its local community to inspire people to create a wilder future – from advising thousands of landowners on how to manage their land to benefit wildlife, to connecting hundreds of thousands of school children with nature every year. www.wildlifetrusts.org
8. A report summarising the key findings and trends impacting the current state of the British and Irish flora, assessing the changes since the 1950s and analysing the drivers of change, such as habitat loss, pollution and climate change, is available here: https://bsbi.org/wp-content/uploads/dlm_uploads/2023/02/BSBI-Plant-Atlas-2020-summary-report-Britain-in-English-WEB.pdf
9. For more information or to arrange an interview with *Plant Atlas* authors and BSBI speakers, please contact Louise Marsh, BSBI Communications Officer for national enquiries: email louise.marsh@bsbi.org, tel: 07725 962 957. For Scotland-specific enquiries, please contact Matt Harding, BSBI Scotland Officer: email matt.harding@bsbi.org, tel: 07814 727 231
10. Register for the media launch online at 3pm on 8th March here: <https://www.tickettailor.com/events/botanicalsocietyofbritainireland/811118>
11. Register for the face-to-face Scotland launch at RBG Edinburgh at 6.30pm on 9th March here: <https://www.tickettailor.com/events/botanicalsocietyofbritainireland/811127>
12. A selection of images and a social media pack can be found here: <https://www.dropbox.com/sh/n7ph91f2s578zjm/AAC1GGKIqVlpL1nqUI595g-Ga?dl=0>